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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,686	01/20/2004	Lisa Robin Goldberg	BARR0011	3349

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EXAMINER	
FERTIG, BRIAN E	

ART UNIT	PAPER NUMBER
4124	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/761,686	GOLDBERG ET AL.	
	Examiner	Art Unit	
	Brian Fertig	4124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/6/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/6/2004 and 4/6/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With respect to claims 1-21

Claims 1-21 are directed toward a computer implemented method, system, or computer program product for providing an investor with a structural model of credit risk. In spite of being directed toward a method, system, or computer program product the claims involve the use of algorithms and human judgment to be operable. Algorithms fall into the judicially defined exception to 35 U.S.C. 101 prohibiting abstract ideas from being patent eligible subject matter. For the purposes of examination, the guidelines set out in the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility published in the Official Gazette 22 November 2005 will be used. Briefly, the law and opinions these requirements are based upon require a claimed invention that falls within a judicial exception to demonstrate some practical application to be allowable subject matter under 35 U.S.C. 101. A practical application can be demonstrated if the claimed invention physically transforms an article or physical object to a different state or thing or if the claimed invention produces a useful, concrete, and tangible result.

The method found in these claims fail to perform any physical transformation to an article or physical object to arrive at a different state or thing. The method of claims 1-21 are computer implemented. As such, the method operates on data and results in data. Data is not a physical thing to which a physical transformation can be made. Further, no transformation is actually accomplished since the data remains in a single state (i.e. it remains data). It has been established by the courts that manipulation of data does not constitute transformation for the purposes of demonstrating a practical application.

Further, the method fails to provide a useful, concrete, and tangible result. In order to output a term structure of default probabilities and fair value of credit sensitive securities, the claims can be read to incorporate subjective human judgment. For example, in claims 1, 8 and 15 recite "determining a conditional default process" and "estimating default probabilities." Claims 2, 9, and 16 recite "calibration parameters", claims 3, 4, 10, 11, 17 and 18 "estimating" model parameters, claims 5,12, and 19 use "agency ratings", claims 6, 13, and 20 "provides capability for incorporating an assumption", and claims 7, 14, and 21 "estimating a mean and and height of said beta distribution" and " calibrating degree of confidence about information". When given their broadest reasonable interpretation, these limitations encompass a human being inserting a subjective judgment that materially influences the result of the method. Subjective judgments will vary from individual to individual, resulting in results which are not substantially repeatable or predictable. As such, applicant's invention does not

produce a concrete result, and therefore does not represent a practical application of the judicially excepted subject matter.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 7, 14, and 21

All of these claims recite "other volatility." This limitation is open ended and, as such, does not provide any positive indication of what is considered to be the scope of applicant's invention.

Further, these claims recite "said scaled beta distribution". This limitation find no antecedent basis within the claims and its meaning cannot be reliably discerned from its context within the claims. For the purposes of examination below, it is assumed that this recitation refers to any distribution computed by the method, system, or computer product.

With respect to claims 8-11,13-18, 20 and 21

Claims 8-11, 13-18, 20 and 21 recite 'means for' plus function language (i.e. 'means for determining', 'means for using'). These recitations, therefore, invoke treatment under 35 U.S.C. 112, sixth paragraph. The 'means for'

language requires corresponding structure within the specification. Applicant's specification contains no such corresponding structure. Therefore, these claims are indefinite. (see MPEP § 2181).

With respect to claims 12 and 19

These claims incorporate rejected base claims and are therefore rejected for the reasons discussed above.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5, 8-12, and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,078,903 to Kealhofer (Kealhofer).

With respect to claim 1

Kealhofer teaches:

> A computer implemented method (see col 2, lines 62-63) for providing an investor with a structural model of credit risk that incorporates short term uncertainty and drops in security prices that occur in the event of default inherent in defaultable securities, where the investor has incomplete information, comprising the steps of said computer:

determining a conditional default process to represent a firm's certainty to default (i.e. $G_M(DP_M|A_H)$, probability of default from horizon to maturity, see col 7, 13-24);

using said conditional default process to determine a compensator (note $G_M(DP_M|A_H)$ is a compensator for the true underlying process of firm default) and pricing trend (i.e. entity value, see col 5 lines 1-30);

with said pricing trend, performing any of:

estimating default probabilities (see col 6, lines 24-40);

and valuing credit-sensitive securities (i.e. loan value, see col 7, line 54-col 9, line 4); and

outputting to said investor a term structure of default probabilities and fair values of credit sensitive securities (see col 4, lines 17-23, note it is implicit that the output be the default probabilities and fair value of credit sensitive securities identified above).

With respect to claim 2

Kealhofer teaches:

The computer implemented method of Claim 1 (see rejection of claim 1 above), further comprising the step of: calibrating parameters of said model to represent the quality of said incomplete information

available to investors (i.e. adjust a horizon default point threshold, see col 6, lines 24-40, note that such an adjustment is necessary to fine tune the model to compensate for a lack of information concerning the true underlying process of a firm default).

With respect to claim 3

Kealhofer teaches:

> The computer implemented method of Claim 1 (see rejection of claim 1 above), further comprising the step of: estimating diffusive (i.e. variance, see col 7, lines 62-65, note that variance is a measure of the firms volatility which accounts for day to day fluctuations in firm value) and jump components of credit risk premium (i.e. $V_{H|D,}$ value of the loan, given default, see col 4, lines 24-42. Note that the decrease in the value of the loan in default would decrease the value of the firm).

With respect to claim 4

Kealhofer teaches:

> The computer implemented method of Claim 1 (see rejection of claim 1 above), further comprising the step of: estimating market implied recovery rates (covariance/correlation used to compute the unexpected loss on an individual loan, see col 8, line 1 – col 9 line 5, note that the likely amount of recovery from a default on a particular loan is calculated from the estimated implied recovery rates of the market).

With respect to claim 5

Kealhofer teaches:

The computer implemented method of Claim 1(see rejection of claim 1 above), wherein said step of determining conditional default probability uses information comprising histories of equity prices, debt outstanding, agency ratings, and accounting variables (see col 3, lines 41-65).

With respect to claim 8

Kealhofer teaches:

A system (see col 2, lines 62-63) for providing an investor with a structural model of credit risk that incorporates short term uncertainty and drops in security prices that occur in the event of default inherent in defaultable securities, where the investor has incomplete information, comprising:

computer means for determining a conditional default process to represent a firm's certainty to default (i.e. $G_M(DP_M|A_H)$, probability of default from horizon to maturity, see col 7, 13-24);

computer means for using said conditional default process to determine a compensator (note $G_M(DP_M|A_H)$ is a compensator for the true underlying process of firm default) and pricing trend (i.e. entity value, see col 5 lines 1-30);

computer means for using said pricing trend to perform any of:

estimating default probabilities (see col 6, lines 24-40);

valuing credit-sensitive securities (i.e. loan value, see col 7, line 54 – col 9, line 4); and

computer means for outputting to said investor a term structure of default probabilities and fair values of credit sensitive securities (see col 4, lines 17-23, note it is implicit that the output be the default probabilities and fair value of credit sensitive securities identified above).

With respect to claim 9

Kealhofer teaches:

The system of Claim 8 (see rejection of claim 8 above), further comprising: means for calibrating parameters of said model to represent the quality of said incomplete information available to investors (i.e. adjust a horizon default point threshold, see col 6, lines 24-40, note that such an adjustment is necessary to fine tune the model to compensate for a lack of information concerning the true underlying process of a firm default).

With respect to claim 10

Kealhofer teaches:

The system of Claim 8 (see rejection of claim 8 above), further comprising: means for estimating diffusive (i.e. variance, see col 7, lines 62-65, note that variance is a measure of the firms volatility which

accounts for day to day fluctuations in firm value) and jump components of credit risk premium (i.e. V_{HJD}, value of the loan, given default, see col 4, lines 24-42. Note that the decrease in the value of the loan in default would decrease the value of the firm).

With respect to claim 11

Kealhofer teaches:

The system of Claim 8 (see rejection of claim 8 above), further comprising: means for estimating market implied recovery rates (covariance/correlation used to compute the unexpected loss on an individual loan, see col 8, line 1 – col 9 line 5, note that the likely amount of recovery from a default on a particular loan is calculated from the estimated implied recovery rates of the market).

With respect to claim 12

Kealhofer teaches:

The system of Claim 8 (see rejection of claim 8 above), wherein said step of determining conditional default probability uses information comprising histories of equity prices, debt outstanding, agency ratings, and accounting variables (see col 3, lines 41-65).

With respect to claim 15

Kealhofer teaches:

A computer program product comprising a computer useable medium having control logic stored therein (memory, see col 3, lines 6-41)

for causing a computer to provide an investor with a structural model of credit risk that incorporates short term uncertainty and drops in security prices that occur in the event of default inherent in defaultable securities, where the investor has incomplete information, comprising:

computer readable program code means for causing the computer to determine a conditional default process to represent a firm's certainty to default (i.e. $G_M(DP_M|A_H)$, probability of default from horizon to maturity, see col 7, 13-24);

computer readable program code means for causing the computer to use said conditional default process to determine a compensator (note $G_M(DP_M|A_H)$ is a compensator for the true underlying process of firm default) and pricing trend (i.e. entity value, see col 5 lines 1-30);

computer readable program code means for causing the computer to use said pricing trend, performing any of:

estimating default probabilities (see col 6, lines 24-40); and

valuing credit-sensitive securities (i.e. loan value, see col 7, line 54 – col 9, line 4); and

computer readable program code means for causing the computer to output to said investor a term structure of default probabilities and fair values of credit sensitive securities (see col 4,

lines 17-23, note it is implicit that the output be the default probabilities and fair value of credit sensitive securities identified above).

With respect to claim 16

Kealhofer teaches:

The computer program product of Claim 15 (see rejection of claim 15 above), further comprising: computer readable program code means for causing the computer to calibrate parameters of said model to represent the quality of said incomplete information available to investors (i.e. adjust a horizon default point threshold, see col 6, lines 24-40, note that such an adjustment is necessary to fine tune the model to compensate for a lack of information concerning the true underlying process of a firm default).

With respect to claim 17

Kealhofer teaches:

The computer program product of Claim 15 (see rejection of claim 15 above), further comprising: computer readable program code means for causing the computer to estimate diffusive (i.e. variance, see col 7, lines 62-65, note that variance is a measure of the firms volatility which accounts for day to day fluctuations in firm value) and jump components of credit risk premium premium (i.e. $V_{H|D,}$ value of the loan, given default, see

col 4, lines 24-42. Note that the decrease in the value of the loan in default would decrease the value of the firm).

With respect to claim 18

Kealhofer teaches:

> The computer program product of Claim 15 (see rejection of claim 15 above), further comprising: computer readable program code means for causing the computer to estimate market implied rates (covariance/correlation used to compute the unexpected loss on an individual loan, see col 8, line 1 – col 9 line 5, note that the likely amount of recovery from a default on a particular loan is calculated from the estimated implied recovery rates of the market).

With respect to claim 19

Kealhofer teaches:

> The computer program product of Claim 15 (see rejection of claim 15 above), wherein said step of determining conditional default probability uses information comprising histories of equity prices, debt outstanding, agency ratings, and accounting variables (see col 3, lines 41-65).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 6, 7, 13, 14, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kealhofer in view of Duffie and Lando, "Term Structures of Credit Spreads with Incomplete Accounting Information," Econometrica, 69(3):633-664(2001) (Duffie).

With respect to claim 6

Kealhofer teaches:

> The computer implemented method of Claim 1 (see rejection of claim 1 above), further comprising the steps of:
>
> providing capability for triggering a default event when a firm value falls below a default barrier values (note that a default barrier is calculated, see 6, lines 24-39, the logical components for triggering a default event are present, see col 4, lines 11-16 , and an event reporting mechanism exists see col 4, lines 17-23 and col. The capability, therefore, is taught by the reference) ;

providing capability for incorporating an assumption that said default barrier value is not publicly known (see col 6, lines 24-39, note that the default barrier is estimated and adjusted and is not based upon a publicly known default value); and

using a history of fundamental data and other publicly available information in determining a default barrier distribution and for estimating parameters of said firm value process (see col 3, lines 42-65).

Kealhofer does not explicitly teach:

providing capability for representing a predefault firm value process by a geometric Brownian motion

Duffie teaches:

providing capability for representing a predefault firm value process by a geometric Brownian motion (see pg 636, sec 2.1)

It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have provided the computer implemented method of Kealhofer with the representation of a predefault firm value process by a geometric Brownian motion taught by Duffie in order to analyze term structures of credit risk and yield spreads in secondary markets as taught explicitly by Duffie (see Abstract and p 633, sec 1)

With respect to claim 7

Kealhofer as modified by Duffie teaches:

The computer implemented method of Claim 6 (see rejection of claim 6 above), further comprising the steps of:

using daily equity prices and equity volatility forecasts, reported liabilities, and risk-free interest rates as input to said step of determining a conditional default probability (see col 3, lines 42-65);

Kealhofer as modified by Duffie does not explicitly teach:

using option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other volatility;

estimating a mean and height of said scaled beta distribution from history of firm leverage ratios; and

providing capability for calibrating degree of confidence about information by providing variance of said distribution as a free parameter.

Duffie further teaches:

using option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other volatility (see pg 633, sec 1, and pp 636-640, sec 2.1);

estimating a mean and height of said scaled beta distribution from history of firm leverage ratios (see pg 643, sec 2.2.1 and fig 2); and

providing capability for calibrating degree of confidence about information by providing variance of said distribution as a free parameter (various levels of a of accounting noise, see pg 644).

It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have further provided the computer implemented method of Kealhofer with the use of option pricing formulae, estimation of mean and height of scales beta distribution and capability for calibrating the degree of confidence about information taught by Duffie in order to analyze term structures of credit risk and yield spreads in secondary markets as taught explicitly by Duffie (see Abstract and p 633, sec 1)

With respect to claim 13

Kealhofer teaches:

The system of Claim 8 (see rejection of claim 8 above), further comprising:

capability for triggering a default event when a firm value falls below a default barrier value (note that a default barrier is calculated, see 6, lines 24-39, the logical components for triggering a default event are present, see col 4, lines 11-16 , and an event reporting mechanism exists see col 4, lines 17-23 and col. The capability, therefore, is taught by the reference);

capability for incorporating an assumption that said default barrier value is not publicly known (see col 6, lines 24-39, note that the default barrier is estimated and adjusted and is not based upon a publicly known default value); and

means for using a history of fundamental data and other publicly available information in determining a default barrier distribution and for estimating parameters of said firm value process (see col 3, lines 42-65).

Kielhofer does not explicitly teach:

capability for representing a predefault firm value process by a geometric Brownian motion;

Duffie teaches:

capability for representing a predefault firm value process by a geometric Brownian motion (see pg 636, sec 2.1)

It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have provided the computer implemented method of Kealhofer with the capability for representing a predefault firm value process by a geometric Brownian motion taught by Duffie in order to analyze term structures of credit risk and yield spreads in secondary markets as taught explicitly by Duffie (see Abstract and p 633, sec 1)

With respect to claim 14

Kealhofer as modified by Duffie teaches:

The system of Claim 13 (see rejection of claim 13 above), further comprising:

means for using daily equity prices and equity volatility forecasts, reported liabilities, and risk-free interest rates as input to

said step of determining a conditional default probability (see col 3, lines 42-65);

Kealhofer as modified by Duffie does not explicitly teach:

means for using option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other volatility;

means for estimating a mean and height of said scaled beta distribution from history of firm leverage ratios; and

capability for calibrating degree of confidence about information by providing variance of said distribution as a free parameter.

Duffie further teaches:

means for using option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other volatility (see pg 633, sec 1, and pp 636-640, sec 2.1);

means for estimating a mean and height of said scaled beta distribution from history of firm leverage ratios (see pg 643, sec 2.2.1 and fig 2); and

capability for calibrating degree of confidence about information by providing variance of said distribution as a free parameter (various levels of a of accounting noise, see pg 644).

It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have further provided the computer implemented method of Kealhofer with the use of option pricing formulae, estimation of mean and height of scales beta distribution and capability for calibrating the degree of confidence about information taught by Duffie (note that it would have been obvious to implement the known processes of Duffie on a modern computer) in order to analyze term structures of credit risk and yield spreads in secondary markets as taught explicitly by Duffie (see Abstract and p 633, sec 1)

With respect to claim 20

Kealhofer teaches:

The computer program product of Claim 15 (see rejection of claim 15 above), further comprising:

computer readable program code means for causing the computer to provide capability for triggering a default event when a firm value falls below a default barrier value (note that a default barrier is calculated, see 6, lines 24-39, the logical components for triggering a default event are present, see col 4, lines 11-16 , and an event reporting mechanism exists see col 4, lines 17-23 and col. The capability, therefore, is taught by the reference);

computer readable program code means for causing the computer to provide capability for incorporating an assumption that said default barrier value is not publicly known (see col 6, lines 24-

39, note that the default barrier is estimated and adjusted and is not based upon a publicly known default value);

and

computer readable program code means for causing the computer to use a history of fundamental data and other publicly available information in determining a default barrier distribution and for estimating parameters of said firm value process (see col 3, lines 42-65).

Kealhofer does not explicitly teach:

computer readable program code means for causing the computer to provide capability for representing a predefault firm value process by a geometric Brownian motion;

Duffie teaches:

computer readable program code means for causing the computer to provide capability for representing a predefault firm value process by a geometric Brownian motion (see pg 636, sec 2.1)

It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have provided the computer implemented method of Kealhofer with the capability for representing a predefault firm value process by a geometric Brownian motion taught by Duffie in order to analyze term structures of credit risk and yield spreads in secondary markets as taught explicitly by Duffie (see Abstract and p 633, sec 1)

With respect to claim 21

Kealhofer as modified by Duffie teaches:

The computer program product of Claim 20 (see rejection of claim 20 above), further comprising:

computer readable program code means for causing the computer to use daily equity prices and equity volatility forecasts, reported liabilities, and risk-free interest rates as input to said step of determining a conditional default probability (see col 3, lines 42-65);

Kealhofer as modified by Duffied does not explicitly teach:

computer readable program code means for causing the computer to use option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other volatility;

computer readable program code means for causing the computer to estimate a mean and height of said scaled beta distribution from history of firm leverage ratios; and

computer readable program code means for causing the computer to provide capability for calibrating degree of confidence about information by providing variance of said distribution as a free parameter.

Duffie further teaches:

computer readable program code means for causing the computer to use option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other volatility (see pg 633, sec 1, and pp 636-640, sec 2.1);

computer readable program code means for causing the computer to estimate a mean and height of said scaled beta distribution from history of firm leverage ratios (see pg 643, sec 2.2.1 and fig 2); and

computer readable program code means for causing the computer to provide capability for calibrating degree of confidence about information by providing variance of said distribution as a free parameter (various levels of a of accounting noise, see pg 644).

It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have further provided the computer implemented method of Kealhofer with the use of option pricing formulae, estimation of mean and height of scales beta distribution and capability for calibrating the degree of confidence about information taught by Duffie (note that it would have been obvious to implement the known processes of Duffie on a modern computer) in order to analyze term structures of credit risk and yield spreads in secondary markets as taught explicitly by Duffie (see Abstract and p 633, sec 1)

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Fertig whose telephone number is (571) 270-5131. The examiner can normally be reached on Monday - Friday 8:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Bomberg can be reached on (571) 272-4922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

-bf

/Mary Cheung/

Primary Examiner, Art Unit 3694